No. 776,278. PATENTED NOV. 29, 1904.

J. WARD.

DISPLAY SIGN.

APPLICATION FILED JULY 23, 1904.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

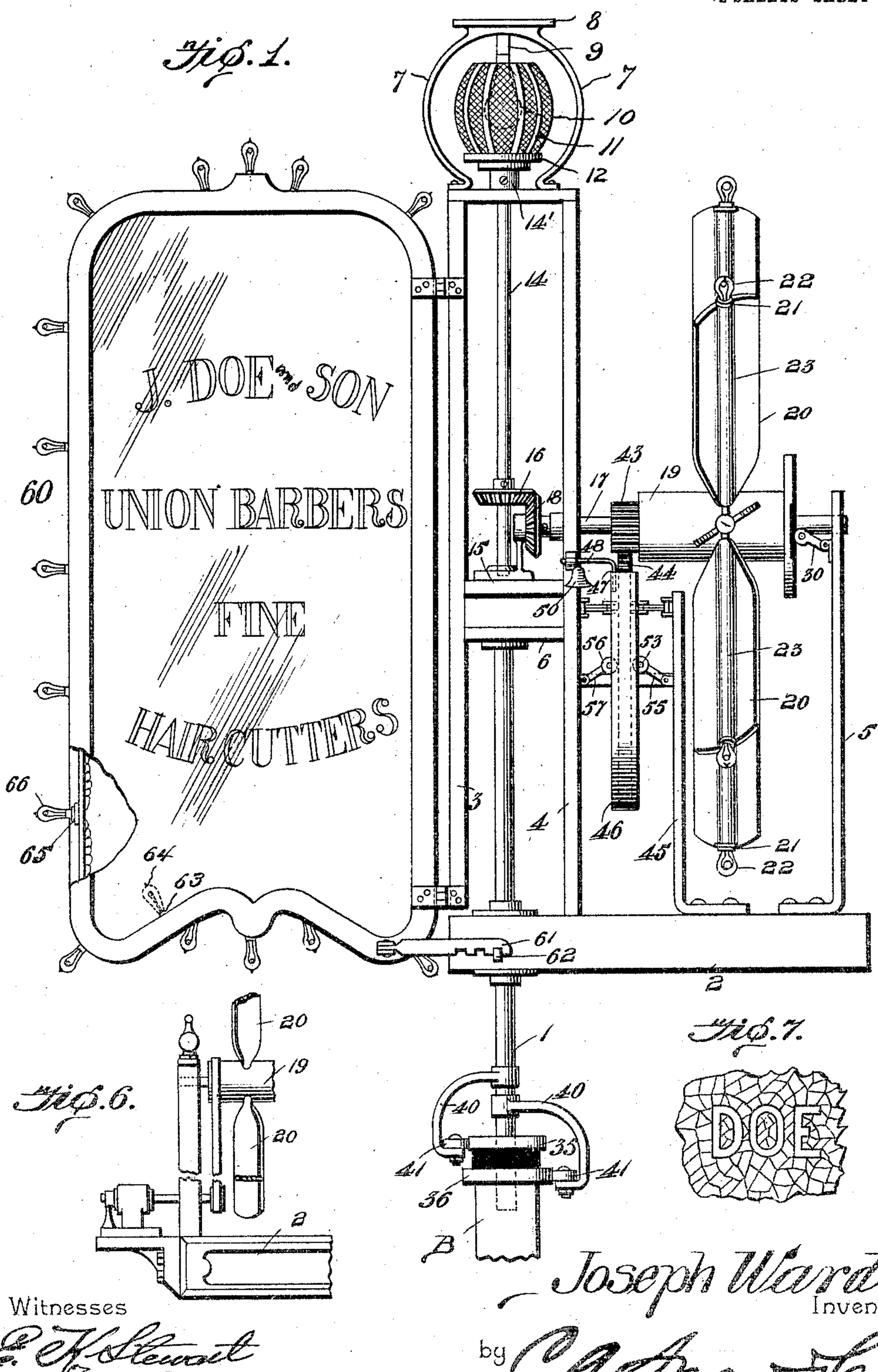

Fig. 6.

Fig. 7.

Witnesses

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NO MODEL. 2 SHEETS—SHEET 2.

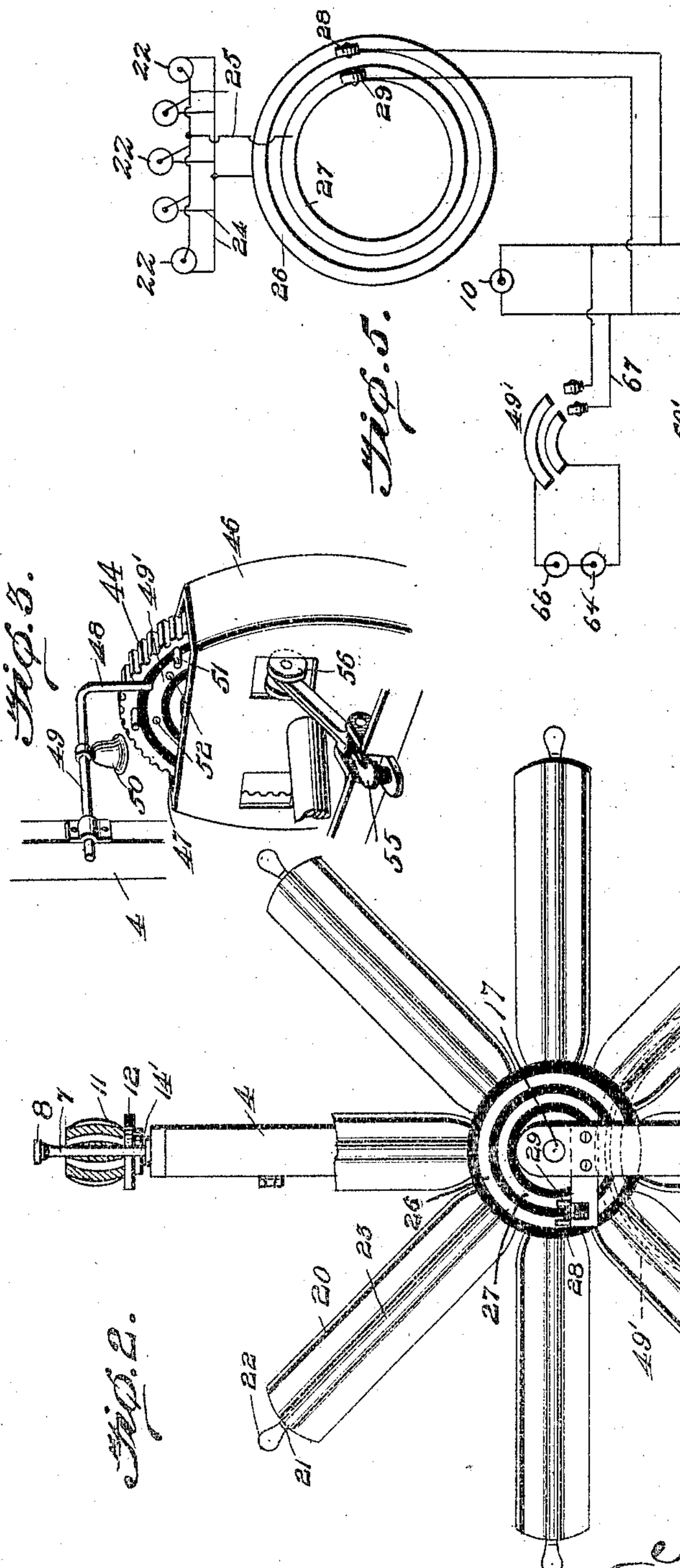

Fig. 1.

Fig. 2.

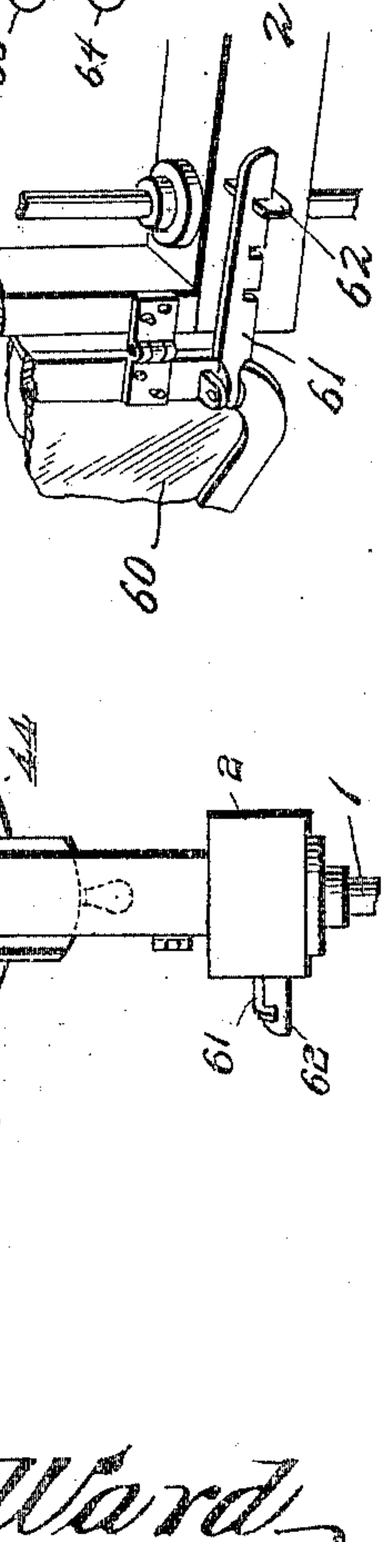

Fig. 4.

Fig. 3.

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UNITED STATES PATENT OFFICE.

JOSEPH WARD, OF WELLSTON, OHIO.

DISPLAY-SIGN.

SPECIFICATION forming part of Letters Patent No. 776,278, dated November 29, 1904.

Application filed July 23, 1904. Serial No. 217,896. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH WARD, a citizen of the United States, residing at Wellston, in the county of Jackson and State of Ohio, have invented a new and useful Display-Sign, of which the following is a specification.

This invention relates to display-signs, and has for its principal object to provide a novel form of sign of that general class in which a wind-wheel or some similar element is utilized for moving parts of the sign with a view of attracting attention.

One of the principal objects of the invention is to provide a sign in which a number of lamps of varying color are so arranged as to disseminate light-rays at different times, the constantly-changing colors being particularly attractive at night.

A further object of the invention is to provide improved means for operating the sign and controlling the electric circuits.

A still further object of the invention is to provide, in connection with the sign, a windmill carrying a light or lights on each of its vanes, said lights being alternately ignited and extinguished as the vanes revolve.

With these and other objects in view, as will more fully hereinafter appear, the invention consists of the novel construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is an elevation of a display-sign constructed in accordance with the invention, a portion of the sign being broken away. Fig. 2 is an elevation of the sign, showing principally the construction of the wind-wheel. Fig. 3 is a detail perspective view of a portion of the circuit-controlling device. Fig. 4 is a detail perspective view illustrating the mechanism for adjusting the position of the sign proper with respect to the frame. Fig. 5 is a diagram of the electrical connections. Fig. 6 illustrates a slight modification in which an electric motor is employed for controlling the movable parts of the sign. Fig. 7 is a detail view, on a slightly-enlarged scale, illustrating the preferred form of sign. Fig. 8 is a detail sectional view of the main gear, showing the contact-strips.

Similar characters of reference are employed to indicate the corresponding parts throughout the several figures of the drawings.

The various working parts of the sign are mounted on a suitable base or support, a base B being employed in the present instance, and from this extends an upright shaft 1, carrying all of the movable parts of the sign.

The main frame of the sign comprises a base-block 2 and a plurality of parallel standards 3, 4, and 5, which may be formed of either wood or metal. The shaft 1 extends upward through the base and between the standards 3 and 4 to a cross-bar 6, that is rigidly secured to the two standards 3 and 4, and this shaft forms the center of movement around which the whole sign may revolve. At the top of the standards 3 and 4 is a pair of arms 7, serving as supports for a cross-bar 8, from which depends a short tube 9, carrying an incandescent lamp 10, or in places where an electric lamp is not available a gas or oil lamp may be employed. This lamp is surrounded by a globe 11, which may be and preferably is of colored glass; but said globe may be painted or may bear the name of the owner of the sign. The globe is mounted on a small turn-table 12, that is carried by a vertical shaft 14, adapted to upper and lower bearings 14′ and 15, respectively, both of such bearings being carried by the standards 3 and 4. On this shaft is a small bevel-gear 16, receiving motion from the windmill or other source and serving to revolve the globe around the lamp.

The two standards 4 and 5 are provided with bearing-openings for a horizontal shaft 17, the end member of said shaft being also in a bearing-opening formed in a vertically-extending portion of the bracket or cross-bar 15, and to said shaft is secured a bevel-gear 18, intermeshing with the gear 16. From the hub 19 of the shaft projects a number of vanes or arms 20, arranged at a suitable angle,

so that when facing the wind the vanes will be revolved, with the shaft 17 as a center. Each of the vanes 20 is provided at its outer end with a lamp-socket 21, in which is placed an incandescent lamp 22, and extending from the socket to the hub is a tube 23, through which the current-conducting wires 24 and 25 may extend, all of the wires 24 being connected to an annular contact-strip 26, secured to the end of the hub, while all of the wires 25 are similarly connected to a contact-strip 27, arranged concentric with the strip 26. The two strips are extended completely around the axle. With these strips engage rollers 28 and 29, respectively, said rollers being formed of conducting material and carried by suitable brackets 30, that are respectively connected to current-conducting wires 32 and 33. During the rotation of the wind-wheel the lights carried by the vanes glow constantly. and in this way the sign may be made attractive, particularly if the lamps are of different color.

To the base B is secured a pair of disks 35 and 36, formed of copper or other suitable material and insulated from each other. One of these disks is connected to a main conductor *x* and the other to a return-conductor *y*. The revolving sign has a pair of depending brackets 40, having rollers 41, which engage these disks and serve after the manner of commutator-brushes for conveying the current from the main lines to the several lamps. The inner portion of the shaft 17 carries a pinion 43, which intermeshes with a gear-wheel 44, mounted in suitable bearings carried one by the main standard 4 and another by an auxiliary bracket 45. This gear-wheel is normally protected by a cover-plate 46, having a slotted upper portion 47, through which extends an arm 48, carried by a rocker-shaft 49, on which is mounted a bell 50. The wheel is provided with a number of pins 51, adapted to engage the rocker-arm 48, and each time one of the pins passes the rocker-arm the alarm will be sounded.

The two faces of the gear-wheel 44 are each provided with three sets of curved contact-strips 49′, 50′, and 51′, corresponding strips of each pair being connected by tie rods or bolts 52, that extend through the disk, and these strips may be of the same or of different length, and preferably are arranged to occupy arcs of about one hundred and twenty degrees each. With the outer sets of strips engage rollers 53, formed of conducting material and carried by pivotally-mounted spring-pressed arms 55, that are supported by the standard 45. The inner strip members are engaged by rollers 56, carried by pivotally-mounted spring-pressed arms 57, that are carried by the standard 4, so that as the gear-wheel revolves circuits may be established from the rollers on one side to those on the opposite side, the circuit being continued so long as the rollers are in contact with the strips; but when the ends of the strips pass beyond the rollers the circuit is broken. The outer brushes 53 are connected in multiple with the wires 32 and 33, while the inner brushes 56 are connected to suitable lamps carried by the display-sign proper. The sign 60 is formed of a preferably metallic frame that is pivotally connected to the main frame of the device and constitutes in part a vane for holding the wind-wheel in position when facing the wind and serving also as a speed-regulator, the vane being connected to the base 2 by a pivotally-mounted notched bar 61 and pin 62, so that by varying the angular relation of the vane and frame the wind-wheel may be presented to the wind at any desired angle, and thus vary the effective force of the wind thereon.

The two sides of the frame 60 are formed of metal or wood and are spaced from each other a distance of three or four inches, so as to permit the introduction between them of incandescent lamps of ordinary size, the inner frame members being provided with sockets 63 for convenience in inserting and removing the lamps 64.

The two sides of the sign are provided with display advertisements, of which the letters are formed of translucent material, such as glass, and this material may be of different color, or the lamps may be of different color in order to vary the effect.

On the exterior of the sign, around its top, bottom, and outer edge, are lamp-sockets 65, in which are placed lamps 66, also of different color. The inner lamps 64 and outer lamps 66 are electrically connected in sets by wires 67, 68, and 69 to the contact-strips 49′, 50′, and 51′ and wires 53 and 55. As the contact-strips do not extend the entire distance around the wheel, there will be only a certain number of the lamps glowing at one time, the remaining lamps being cut out, and by properly distributing the lamps and by arranging their colors the effectiveness of the sign may be greatly increased.

It is obvious that the sign may be used in many places, whether exposed to the wind or not, and if not exposed to the wind the sign may be driven by any suitable motor, being driven by water, air, gas, or other power, and in the present instance Fig. 6 illustrates the application of a small electric motor for this purpose.

In Fig. 7 is illustrated the preferred form of sign, the letters being formed of translucent glass of one color and surrounded by pieces of glass of contrasting colors in much the same manner as stained-glass windows are constructed.

Having thus described the invention, what is claimed is—

1. In a display-sign, a revoluble frame, an illuminated sign forming a vane and control-

ling revoluble movement of the frame, a revoluble member carried by said frame and including a plurality of vanes and a central hub, incandescent lamps carried by the vanes, electric contacts secured to and movable with the revoluble member, said contacts being in circuit with the lamps, stationary contacts with which the movable contacts engage, breaking the circuit stationary contacts.

2. In a display-sign, a frame revoluble on a vertical axis, a wind-wheel mounted on a horizontally-disposed axis, a sign forming a vane for the wind-wheel, incandescent lamps adjacent to the sign, a source of electrical energy in circuit with the lamps, and means controlled by the wind-wheel for making and breaking the circuit.

3. In a display-sign, a frame revoluble around a vertical axis, a wind-wheel, a vane mounted on a hollow frame arranged for the display of advertising matter, incandescent lamps in said frame, a circuit connecting said lamps to a source of electrical energy, and circuit making and breaking devices controlled by the wind-wheel.

4. In a display-sign, a frame mounted for movement around a vertical axis, a wind-wheel, a hollow frame forming a display-sign and serving as a vane for the wind-wheel, incandescent lamps disposed in several sets within the frame, a source of electrical energy with which the lamps are connected in multiple, and a plurality of sets of circuit making and breaking devices controlled by the wind-wheel.

5. In a display-sign, a frame mounted for revoluble movement around a vertical axis, a wind-wheel, a hollow frame forming a display-sign and serving as a vane for the wind-wheel, lamp-sockets arranged both on the interior and rim of the frame, lamps carried by the sockets, a wheel or disk revolved by the wind-wheel, a plurality of sets of arcuate contact-strips carried by said wheel or disk, stationary contacts connecting the sets of strips to the lamps, and a second set of contacts also engaging the arcuate strips and connected to a source of electrical energy.

6. In a display-sign, a frame, a wind-wheel supported by the frame, a contact-carrying wheel movable by the wind-wheel, a plurality of sets of arcuate contacts arranged on both sides of the wheel, and connected in pairs, a plurality of sets of stationary contacts engaging said arcuate contacts and connected to a source of electrical energy, a plurality of sets of incandescent lamps carried by the sign, and a second series of stationary contacts connected to the lamps and engaging said arcuate contacts.

7. The combination in a display-sign, of a support, a vertical shaft mounted on such support, a pair of revoluble contacts carried by the shaft, a pair of stationary contacts carried by the support, electrical conductors connected to the support-carried contacts, a frame mounted on the shaft and including a plurality of vertical standards, a second vertical shaft supported by the frame, a lamp-bracket carried by the standards, a lamp secured to the bracket, a lamp-globe carried by and revoluble with said second shaft, a wind-wheel supported by the frame, gearing connections between the wind-wheel and the second shaft, a contact-carrying disk on the wind-wheel, lamps carried by the vanes of the wind-wheel and electrically connected to the contacts of the disk, current-conductors engaging said contacts, and a sign forming a vane for controlling the revoluble movement of the frame, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOSEPH WARD.

Witnesses:
LIBBE MCNAUGHTON,
OSCAR CLARK.